



Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION  
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*Application of*

**ECHOSTAR COMMUNICATIONS CORPORATION,  
GENERAL MOTORS CORPORATION,  
HUGHES ELECTRONICS CORPORATION**

Transferors,

**CS Docket No. 01-348**

and

**ECHOSTAR COMMUNICATIONS CORPORATION**

Transferee,

For Authority to Transfer Control

**DECLARATION OF DR. ROBERT D. WILLIG  
ON BEHALF OF  
ECHOSTAR COMMUNICATIONS CORPORATION, GENERAL MOTORS  
CORPORATION, AND HUGHES ELECTRONICS CORPORATION**

## **I. Qualifications**

1. My name is Robert D. Willig. I am Professor of Economics and Public Affairs at the Woodrow Wilson School and the Economics Department of Princeton University, a position I have held since 1978. Before that, I was Supervisor in the Economics Research Department of Bell Laboratories. My teaching and research have specialized in the fields of industrial organization, government-business relations, and welfare theory.

2. I served as Deputy Assistant Attorney General for Economics in the Antitrust Division of the Department of Justice (DOJ) from 1989 to 1991. I also served on the Defense Science Board task force on the antitrust aspects of defense industry consolidation and on the Governor of New Jersey's task force on the market pricing of electricity.

3. I am the author of *Welfare Analysis of Policies Affecting Prices and Products*, *Contestable Markets and the Theory of Industry Structure* (with William Baumol and John Panzar), and numerous articles, including "Merger Analysis, IO Theory, and Merger Guidelines." I am also a co-editor of *The Handbook of Industrial Organization*, and have served on the editorial boards of the *American Economic Review*, the *Journal of Industrial Economics* and the MIT Press Series on regulation. I am an elected Fellow of the Econometric Society and an associate of The Center for International Studies.

4. I have been active in both theoretical and applied analysis of telecommunications issues. Since leaving Bell Laboratories, I have been a consultant to AT&T, Bell Atlantic, Telstra, and New Zealand Telecom, and have testified before the U.S. Congress, the FCC, and the public utility commissions of about a dozen states. I have been on government and privately supported missions involving telecommunications throughout South America, Canada, Europe, and Asia. I have written and testified on a wide range of telecommunications issues, including the scope of competition, end-user service pricing and costing, unbundled access arrangements and pricing, the design of regulation and methodologies for assessing what activities should be subject to regulation, directory services, bypass arrangements, and network externalities and universal service. On other matters, I have worked as a consultant with the Federal Trade Commission, the Organization for Economic Cooperation and Development, the Inter-American Development Bank, the World Bank, and various private clients.

## **II. Purpose and Summary of Statement**

5. I have been asked by EchoStar Communications Corporation, General Motors Corporation, and Hughes Electronics Corporation to reply to comments submitted to the Federal Communications Commission (FCC) in opposition to the proposed merger between EchoStar and DIRECTV (a subsidiary of Hughes). In particular, I will respond

to the declarations submitted by Dr. Paul MacAvoy, Dr. Daniel Rubinfeld, and Mr. J. Gregory Sidak.<sup>1</sup>

6. To summarize the results of my analysis, I conclude that (a) the proposed merger will allow the combined entity to provide local broadcast programming to every area of the country, and neither firm could provide such universal local service absent the merger; (b) the proposed merger will result in benefits from significant scale economies and a significant improvement in the productivity of the spectrum employed, which will allow the combined entity to provide an enlarged array of new or expanded services (e.g., more High-Definition Television channels, more interactive services, and more specialized programming); (c) the combined entity will be able to offer a more price competitive satellite-based broadband service, thereby making it more likely that satellite-based broadband is adopted by residential consumers; (d) the combined entity's national pricing will be driven by a weighted average of competitive forces from various regions' cable systems, with larger markets playing a more important role – that is, the benefits from competition in larger, more competitive DMAs will likely be “exported” to smaller rural markets and non-cable passed areas; (e) the efficiency improvements will make the combined entity a more effective competitor to cable providers than either company could be on its own, and could perpetuate a virtuous cycle of competitive innovation; (f) the available churn data from EchoStar and DIRECTV indicate that the

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<sup>1</sup> Declaration of Paul W. MacAvoy, Exhibit I to the Petition to Deny of the National Rural Telecommunications Cooperative, CS Docket No. 01-348 (filed February 4, 2002) (“MacAvoy Declaration”); Affidavit and Report of Daniel L. Rubinfeld, Attachment A to the Petition to Deny of Pegasus Communications Corporation, CS Docket No. 01-348 (filed February 4, 2002) (“Rubinfeld Declaration”); Declaration of J. Gregory Sidak, Appendix B to the Petition to Deny of the National Association of Broadcasters, CS Docket No. 01-348 (filed February 4, 2002) (“Sidak Declaration”).

degree of competition between the two entities is dwarfed by the degree of competition between DBS and cable – such a finding suggests that cable would continue to effectively constrain the prices of the combined entity in the post-merger world; (g) the analyses of the competitive effects of the proposed merger by Dr. MacAvoy, Dr. Rubinfeld, and Mr. Sidak are fundamentally misguided, because they are predicated on flawed data, incorrect assumptions, or overly simplistic statistical techniques; and (h) the combined entity would likely find it difficult to price discriminate between areas with cable and areas without cable.

### **III. The Merger Will Create Significant Benefits for Consumers**

7. The merger of EchoStar and DIRECTV, by realizing significant scale economies and by significantly elevating the productivity of the spectrum employed, will create substantial benefits for consumers. I understand that if the merger is completed, “New EchoStar” will offer local channels in every local market in the United States, thereby directly creating significant consumer benefits and making Direct Broadcast Satellite (DBS) more competitive with cable providers throughout the country. An increase in the availability of spectrum will also allow New EchoStar to offer additional programming, and higher-quality advanced services, such as expanded interactive television, High-Definition Television (HDTV), and video-on-demand, which appear to be important services for DBS to stay increasingly competitive with cable.

8. New EchoStar’s marginal costs – such as programming costs – will also be lower than the existing firms’ marginal costs. Such a reduction in marginal costs will

exert downward pressure on the price charged by New EchoStar. Finally, the combined subscriber base will also make the combined entity's satellite-based broadband service more competitive versus the extant high-speed Internet access technologies, thereby making it more likely that this satellite-based service will be adopted by consumers. All of these efficiencies, contrary to what was stated in various opposition filings in this proceeding, deserve to be given weight in the merger's public interest evaluation.

#### **INCREASE IN THE PROVISION OF LOCAL CHANNELS**

9. New EchoStar has committed to offer local channels in every local market in the country. Because of spectrum constraints and financial considerations, neither firm could provide such universal local service absent the merger. As discussed in more detail below, it is clear that subscribers value local channels as part of a satellite video package, as evidenced by the increase in subscriber growth experienced by the two firms in the Designated Market Areas (DMAs) in which local channels have been introduced. Opponents of this merger correctly note that this efficiency should be given weight only if the merger is necessary for it to occur. In making this determination, it is important to evaluate not only whether the DBS firms would be technically able to serve these DMAs on their own, but also whether it would be in the firms' *financial* interests to serve these DMAs. Opponents of this merger have only focused on technical feasibility, while ignoring the crucial issue of economic costs and benefits.<sup>2</sup> In addition to technical feasibility issues, it is a key point from the economic perspective that without the merger

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<sup>2</sup> Even the declarations by economists opposed to the merger ignore the economic costs and benefits of providing local service. See, for example, Rubinfeld Declaration at ¶¶ 72-77 and Sidak Declaration at ¶ 88.

it would not be profitable for the two firms on their own to expand their offerings of local channels to reach all 210 DMAs. With the merger, however, New EchoStar has committed to provide local service to the entire country.

10. When the DBS companies separately consider their decisions concerning where local channels should be added, they attempt to assess the expected returns from adding local channels to various DMAs. Not surprisingly, a key factor in determining the expected return from adding local channels is the size of the DMA: According to both DBS firms, larger DMAs, all else being equal, are associated with larger expected revenue – primarily because the expected increases in total new subscribers are greater in larger DMAs.<sup>3</sup> Consequently, by and large, the DBS firms have introduced local service in the largest DMAs first. Another important factor is the penetration that the DBS firm has in that DMA, since many existing subscribers “take” local channels.<sup>4</sup> According to DIRECTV executives, for example, DIRECTV is concerned about losing its installed base in a DMA to the incumbent cable provider, so it is more likely to introduce local channels in DMAs in which it has a high penetration rate.<sup>5</sup>

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<sup>3</sup> The DBS firms also factor population growth by DMA into their analysis. That is, a DMA that is growing more rapidly, but currently is somewhat smaller (in terms of population) may get service before a DMA that is somewhat larger, but is currently experiencing no population growth.

<sup>4</sup> In addition, DIRECTV executives note that a high DBS penetration rate may be a “signal” of other factors that could make the introduction of local service more profitable. For example, a high DBS penetration rate may indicate that the local cable provider offers an inferior product. A high DBS penetration rate may also be a signal that the area is conducive to DBS service – that is, many households can “see” the southern sky where the DBS satellites orbit the earth.

<sup>5</sup> In a limited number of examples, other factors have affected the benefits of entering a particular market. For example, DIRECTV introduced local service in Austin, Texas before it introduced the service in some larger DMAs. The decision to serve Austin “out of order” partly reflected the fact that DIRECTV had introduced a package of programming targeted at Hispanics. The Hispanic programming was being carried at the 119° slot, and the available spectrum for local programming was also at the 119° slot. Since customers were going to need an upgraded dish to “see” the 119° slot anyway, DIRECTV targeted its local service roll-out at a somewhat smaller market, but one with a higher percentage of Hispanics.



11. Another key component in assessing the provision of local service is the cost of providing local channels in a particular market. Much of the cost that is caused by the provision of local service to a given area is “fixed” (and does not vary) with respect to the number of subscribers. The local channels are aggregated at local collection facilities in each DMA, compressed, and backhauled from the local areas to the firms’ uplink facilities. These costs are incurred regardless of the size of the DMA. Some variation can occur in the costs of serving a market depending on how far the signals need to be transported. Another factor influencing the costs of serving a particular local area is the number of local channels that need to be transported from that area to the firms’ uplink facilities.<sup>6</sup>

12. A critical cost of providing local service is its opportunity cost.<sup>7</sup> Each DBS firm has a finite amount of spectrum: EchoStar has 50 full-CONUS frequencies and DIRECTV has 46 full-CONUS frequencies. Any frequency that is used to provide local service cannot be used to provide programming or other services on a full-CONUS basis. Introducing local service therefore has opportunity costs (in terms of the competitive and commercial impacts of reduced national programming or other services), which should be accounted for in any analysis of the economic costs and benefits of local service provision.

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<sup>6</sup> The number of channels that the DBS firms carry in a local market is the function of two factors: First, the channels that the DBS entity wants to carry (e.g., the major networks, such as ABC, NBC, CBS, and Fox), and second, the number of stations that the DBS providers “must carry.” Under the “must carry” rules, if a satellite carrier elects to transmit even one local broadcast station in a local market, it must also carry, upon request, the signals of all other qualified broadcast stations in that market. See 47 C.F.R. § 76.66. This requirement is a condition of the carrier’s use of the compulsory copyright license granted by the Satellite Home Viewer Improvement Act of 1999. See 47 U.S.C. § 338.

<sup>7</sup> Commenters appear to ignore the opportunity costs of providing local service. For example, Dr. Rubinfeld argues that the two DBS firms could “possibly” expand local service to all 210 DMAs, but he does not consider the opportunity costs of providing such local service. See Rubinfeld Declaration at ¶ 77.

13. EchoStar and DIRECTV thus attempt to assess the net present value of adding local channels, and only decide to expand local channel coverage that will bring them a sufficient return. As the sizes of DMAs decrease, it is less likely that the return from adding local stations in these areas will make financial sense. That is, the increased revenue potential decreases as the size of the DMA decreases, but the backhaul and opportunity costs stay relatively constant.

14. There are two primary reasons why neither firm could serve all 210 DMAs on its own, even if it were technically feasible. First, the DBS firms would have to forgo national programming channels or other advanced services, which would adversely affect each firm's core business. Given the current state of technology and assuming the use of a new spot-beam satellite, a significant number of additional frequencies would be required to provide local service to all 210 DMAs.<sup>8</sup> For example, for each additional frequency needed to provide local broadcast service, the DBS firms would be unable to carry roughly 10 channels of national programming or to expand advanced services by an equivalent amount. Expanding local service to all 210 DMAs therefore would prevent DIRECTV or EchoStar from carrying so many national channels in its programming line-

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<sup>8</sup> DIRECTV currently uses six frequencies to provide local service to 41 markets from its DIRECTV-4S satellite and can provide local service to 29 additional markets using three frequencies from its DIRECTV-7S satellite when it is launched. To provide local service to the remaining DMAs, DIRECTV would have to launch another spot-beam satellite and transfer a significant number of frequencies to local service from full-CONUS programming or other services. Given EchoStar's current and expected satellite fleet, EchoStar would likely have to transfer even more frequencies than DIRECTV from full-CONUS programming or other services to carry local channels in every market.

up or from offering more robust advanced services that it would likely have a significant adverse effect on the DBS firms' competitiveness and profitability.<sup>9</sup>

15. Second, each firm would face an additional cost: neither firm can provide service to every market in the United States with its current and expected fleet of spot-beam satellites. Once DIRECTV launches its DIRECTV-7S satellite in late 2003, it will have the *technical capacity* to serve 103 DMAs.<sup>10</sup> To provide local service to the remaining 107 DMAs, DIRECTV would have to launch another spot-beam satellite.<sup>11</sup> Spot-beam satellites typically cost between \$220 million and \$300 million to construct, launch, and insure. The expected benefits of providing local service to these 107 DMAs would therefore have to be large enough to cover the opportunity costs of forgoing national programming (or advanced services) *and* the expected costs of providing the service including the cost of the new spot-beam satellite. Absent the merger, expanding local service to all 210 DMAs would not be profitable. That is, the DBS firms would be unlikely to forgo so many national channels (or the advanced services that could be

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<sup>9</sup> Because EchoStar would have to transfer even more frequencies than DIRECTV from full-CONUS programming (or other services) to provide local service in all 210 DMAs, EchoStar would have to forgo carrying even more channels (or advanced services) than DIRECTV.

<sup>10</sup> DIRECTV can serve 70 DMAs using six spot-beam frequencies on DIRECTV-4S and three spot-beam frequencies on DIRECTV-7S (once it is launched in late 2003). The technical capacity to serve 103 DMAs arises because DIRECTV can transfer one additional frequency from full-CONUS programming to carry local channels via another spot-beam frequency on DIRECTV-7S. But, in the absence of the merger, transferring a full-CONUS frequency to local service is associated with significant opportunity costs, especially when compared to the expected returns from serving these markets. As noted above, an important factor in DIRECTV's decision to serve a local market is DIRECTV's penetration rate in that DMA. Without the merger, the expected returns from serving all 103 DMAs for DIRECTV on its own would thus be lower than for a combined entity. As DIRECTV executives state, given the opportunity costs and expected returns, it is likely that DIRECTV will serve only 70 DMAs – and it may end up serving even less. It appears as though the National Rural Telecommunications Cooperative (NRTC) agrees with this assessment. In another proceeding, NRTC argued that it was “highly unlikely” and “unrealistically optimistic” that EchoStar and DIRECTV on their own would serve more than 65 DMAs. See Comments of the National Rural Telecommunications Cooperative, CS Docket No. 00-96 (dated July 14, 2000), at 4-5.

<sup>11</sup> Assuming that EchoStar's two spot-beam satellites are successfully deployed, EchoStar would be able to realistically serve roughly 50 DMAs from these spot-beam satellites, in light of its satellite architecture, economic feasibility considerations, and estimated redundancy needs.

carried in lieu of these channels) and would be unlikely to recover the costs of constructing, launching, and insuring the new satellite, along with the other various costs associated with introducing local service.

16. Following the merger, however, the economics of providing local service to additional DMAs are altered. The combined current and potential subscriber base of the two DBS firms raises the returns on the investment in providing local service to smaller markets by spreading the fixed cost of providing local service over the larger expected revenue that would come from a larger subscriber base.<sup>12</sup> Furthermore, the opportunity costs of transferring a significant number of frequencies from use for national programming (or advanced services) to use for local service are sharply reduced. In fact, combining the spectrum of EchoStar and DIRECTV and eliminating the duplication of programming offered by the two firms would provide New EchoStar with enough spectrum to offer local service to all 210 DMAs, while expanding the depth and breadth of advanced services (described below), offering more niche and specialty programming, increasing the number of HDTV channels, and expanding the number of national programming channels.<sup>13</sup> As noted above, in the absence of the merger, the individual firms would not be able to serve these communities. Therefore, the merger is necessary to achieve this efficiency.

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<sup>12</sup> Besides the revenue from potential new subscribers, the larger-than-expected revenues are generated by two factors: first, the ability to sell the local service to a larger existing subscriber base, and second, the ability to protect a larger subscriber base from switching to cable – as noted below in the text, carrying local channels is an important service to maintain extant subscribers.

<sup>13</sup> To be sure, the opportunity cost of using spectrum for local service rather than for some other purpose is still positive. But assuming that the returns to the other purposes (e.g., more advanced services, national programming, or HDTV channels) are diminishing in the amount of spectrum devoted to them (in other words, the highest value activities are undertaken first and subsequent activities are of declining value), the opportunity cost is lower than in the absence of the merger because of the spectrum efficiencies created by the merger.

17. Lack of local channels had placed DBS at a competitive disadvantage to cable.<sup>14</sup> For example, according to a January 2000 survey by Forrester Research, 47 percent of cable subscribers would not subscribe to satellite television because they do not “want to lose reception from the major networks (e.g., ABC, NBC, CBS).”<sup>15</sup> The fact that consumers value carriage of local channels as part of a DBS offering has been clearly demonstrated in the DMAs in which EchoStar and DIRECTV have already offered local channels. For example, after launching local service, EchoStar’s DMA-level subscriber growth rate increased by an average of 30 percent in the 36 local markets it introduced local service. Similarly, when DIRECTV rolled out its local service in 41 markets, its subscriber growth rate in those markets rose by an average of 17 percent.<sup>16</sup> It is important to note that the increase in DBS subscriber growth is evidence that the introduction of local channels in particular areas has provided direct benefits to consumers and has additionally placed more competitive pressure on cable in those areas. New EchoStar’s commitment to expand the provision of local channels to every market will therefore introduce additional competitive pressure throughout the country to the incumbent cable providers.<sup>17</sup>

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<sup>14</sup> The Department of Justice concluded that, “to the extent that DBS cannot offer subscribers local broadcast channels, it has a competitive disadvantage relative to cable because many viewers demand local news and weather and popular network programming.” See Comments of the U.S. Department of Justice, *In the Matter of the Application of MCI Telecommunications Corporation and EchoStar Communications Corporation*, File No. SAT-ASG-19981202-00093, January 14, 1999, available at <http://www.usdoj.gov/atr/public/comments/2173.htm>

<sup>15</sup> Author’s calculation based on Forrester Research, Technographics® Survey, January 2000.

<sup>16</sup> The impact of local service on subscriber growth was estimated after controlling for DMA-level economic conditions (proxied for by the unemployment rate in those states where the DMA is located), the previous month’s penetration rate of each DBS provider, national business cycle and other factors that affect all DMAs each month, and persistent differences in DMA-level subscriber growth rates.

<sup>17</sup> The National Association of Broadcasters has claimed that local broadcasters will be hurt because the merger will not result in more markets being served and local broadcasters will face a loss in competition in the *purchase* of local retransmission signals. Such arguments are misguided. First, as discussed above, the

## REDUCTION IN PROGRAMMING COSTS

18. A significant component of the marginal cost of providing DBS service is the cost of acquiring the programming distributed by the DBS providers. As a result of the merged entity's larger subscriber base, New EchoStar's programming costs will be lower since the price for programming tends to decline as the number of subscribers increases.

19. Opponents of this merger have not disputed this point, but only dispute whether the size of these savings would be large enough to outweigh any risk of a price increase after this merger.<sup>18</sup> However, these opponents have not attempted to quantify the size of these cost savings. Many existing contracts between programmers and either EchoStar or DIRECTV include "volume discount clauses." Since the merger will increase the customer base of New EchoStar substantially, such volume discount clauses – which in at least some cases include additional discounts for subscriber bases above the levels that are currently achieved by each firm alone – would allow the combined entity to benefit immediately from lower programming costs.

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merger will result in *every* local market receiving local channels. As described above, without the merger, neither firm could provide local service to every market in the country. Second, New EchoStar would have every incentive to offer local channels, since customers value local channels and its primary competitor (cable) carries such channels. Furthermore, if, for some reason, New EchoStar decided not to carry a particular channel, that channel would have the ability to file for "must carry" rights. New EchoStar would then be required to carry the station, which would benefit from increased advertising revenue as a result of the larger subscriber base from the merger. Finally, DIRECTV notes that there are no substantive differences between the retransmission rights obtained in the six markets in which DIRECTV provides local service and EchoStar does not, and the 35 markets in which both DBS firms provide local service.

<sup>18</sup> Rubinfeld Declaration at ¶ 79; Sidak Declaration at ¶¶ 92-94.

20. The larger customer base could also allow New EchoStar to obtain future programming contracts that are more consistent with the prices paid by the larger cable operators. This benefit will largely accrue over time as New EchoStar renegotiates programming contracts, but some benefits will result immediately. Specifically, certain contracts have “most favored nations” clauses that indicate that EchoStar or DIRECTV is entitled to the same price that is received by any other MVPD entity that has a similar subscriber base. New EchoStar’s larger subscriber base should allow it to obtain future programming contracts that are more consistent with the prices paid by cable operators with comparable subscriber bases.<sup>19</sup> Importantly, this efficiency is merger specific because neither DBS firm would be able to achieve such programming cost savings on its own.

#### **INTRODUCTION OF NEW PROGRAMMING AND ADVANCED SERVICES**

21. Currently, EchoStar and DIRECTV each broadcast roughly 600 cable channels and broadcast station feeds with substantial overlap – that is, they both use spectrum for identical programming (e.g., CNN, HBO, local network affiliates, etc.). By combining the spectrum of EchoStar and DIRECTV and eliminating the duplication of programming offered by the two firms, spectrum will be freed up to expand programming and advanced services, such as interactive television, HDTV, and video-on-demand.

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<sup>19</sup> DBS executives note that they often face higher programming prices than cable firms, which appears to be confirmed by the Chairman and CEO of a major programmer: In November 2001, Sumner Redstone, the Chairman and CEO of Viacom, stated that, “what a lot of people don’t know is that satellite broadcasters pay us more for the same programming than cable operators.” See Sallie Hofmeister, “Q&A: Redstone Sees More Growth for Viacom,” *Los Angeles Times*, November 18, 2001, page C1.

22. Increasing the diversity of television programming is an explicit goal of the FCC.<sup>20</sup> As the FCC recently noted, many programming services have been planned, but have not been able to launch. One factor that has limited the launch of these new networks is the lack of channel capacity, particularly among analog cable systems.<sup>21</sup> The spectrum efficiencies and expanded channel capacity resulting from the merger will allow New EchoStar to expand specialized programming offerings. Such programming could include ethnic, foreign language, educational, or other programs that appeal to specific audiences. Therefore, the proposed merger between EchoStar and DIRECTV will likely result in an increase in the programming offerings available to consumers.

23. Advanced services – such as, interactive television, HDTV, and video-on-demand – are bandwidth intensive and each firm is limited in its ability to offer these services in the absence of the merger. Such limitations on advanced service offerings pose a particular threat to effective competition in the MVPD market. As cable expands its digital offerings, it will be able to roll out more of these advanced services and it will become more difficult for DBS to compete with such digital offerings. Observers of the environment in which cable and DBS compete have noted the importance of these

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<sup>20</sup> See, for example, Federal Communications Commission, *Report and Order*, 3 FCC Red 5299, 5310 (1988) stating that “One good indicator of whether a policy enhances the objective of using competition to carry out the Commission’s goals under the Communications Act is whether that policy increases the supply and diversity of programming demanded by viewers.” See also *United Video, Inc. v. FCC*, 890 F.2d 1173, 1181 (D.C. Cir. 1989), which concluded that “Increasing program diversity is a valid FCC goal...”

<sup>21</sup> See Federal Communications Commission, *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, Eighth Annual Report, (“Eighth Annual Cable Competition Report”) at ¶ 160.



advanced services to consumers and the potential advantage cable would have in its ability to offer them.<sup>22</sup>

24. Cable also has an advantage with respect to interactive television. Cable's infrastructure is more readily capable of two-way transmission, while the DBS spectrum available for serving customers is one-way only. Cable's inherent two-way capability provides it with a competitive advantage in the area of interactive services. The DBS companies indicate that they could match cable's two-way transmission capability, but only through a "virtual" system.<sup>23</sup> To provide such a virtual two-way system requires a substantial amount of bandwidth, but, as stated above, the DBS firms are currently bandwidth-constrained without the merger. The potential competitive disadvantage of DBS is accentuated by the fact that each DBS company operates with a fixed amount of spectrum, while a cable company can make investments that allow it to expand continually its effective bandwidth. Thus, given the current state of technology, DBS has an output constraint that may limit the dynamic nature of competition between cable and DBS (which is discussed in more detail below).

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<sup>22</sup> In fact, it is already the case that, of those consumers who have been recently upgrading to digital service of one type or another, about two-thirds appear to be going to cable, while only one-third are going to DBS. See Morgan Stanley Dean Witter, *Industry: Broadband Cable Television*, July 3, 2001 ("Morgan Stanley") at 3.

<sup>23</sup> In such a "virtual" system, the DBS provider broadcasts a large amount of data repeatedly from the satellite to the customer's set-top receiver. These "data carousels" may consist of weather information associated with hundreds of locations, current stock quotes for thousands of companies, or other information. If a consumer wants to receive a stock quote, software in the satellite receiver would process the customer's request by searching the appropriate data carousel (which contains data for thousands of companies), "grab" the requested data, and display it to the consumer. Since cable can transmit information in both directions, the request for a stock quote would be sent to a cable server, which would subsequently transmit the specific data to the consumer's cable set-top for display on the television. From a consumer standpoint, each of these provides a similar "interactive" experience, but the DBS approach is more bandwidth intensive.

25. The situation with respect to video-on-demand is similar. It is estimated that cable operators will roll out video-on-demand capabilities across 25 percent to 30 percent of their footprints by the end of this year and roll out these services to all subscribers by 2005.<sup>24</sup> Such video-on-demand capabilities should strengthen the competitive position of cable operators. But EchoStar and DIRECTV cannot perfectly match cable's "true" video-on-demand offering. Rather, EchoStar and DIRECTV can provide "near video-on-demand" programming, which offers pay-per-view movies at relatively frequent start times. For such near video-on-demand to compete effectively against cable's true video-on-demand, it must have a large selection of movies and the movies must start on a frequent enough basis. The availability of additional spectrum will allow New EchoStar to enhance its "near video-on-demand" programming by offering more pay-per-view titles at more frequent start times. In addition, New EchoStar has the potential of offering true video-on-demand services to its customers through the combination of its satellite broadcast network and personal video recorder technology.<sup>25</sup> The merger will thus allow New EchoStar to introduce a more effective competitive option because of the availability of additional spectrum.

26. The merger will also allow the combined entity to provide consumers with additional high-definition programming. Each company currently offers only two to four channels of HDTV programming, largely because HDTV is extremely spectrum

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<sup>24</sup> Morgan Stanley at 4.

<sup>25</sup> Through such personal video recorder technology, a DBS operator can deliver and store video content on the set-top box's hard disk for subsequent viewing by a customer on an "on-demand" basis. The merger will not only allow the combined entity to choose the most efficient means of achieving a true video-on-demand product, but will expand the depth and robustness of the video-on-demand services available to consumers.

intensive: By freeing up additional spectrum, the combined entity will be able to offer more HDTV channels than either firm could carry on its own.<sup>26</sup> This commitment of spectrum to HDTV programming will provide additional incentives for consumers to invest in HDTV hardware, and for producers to invest in HDTV content. The proposed merger may also force cable providers to offer additional HDTV channels.<sup>27</sup> As Circuit City noted in its comments, “the broader offer of HDTV content by a satellite MVPD provider will most certainly spur competition in this area from cable operators and necessarily help speed the rollout of this technology nationally. It should further drive the sales of these displays, leading to additional reductions in their cost.”<sup>28</sup> The proposed merger may thus help to jump-start the sluggish HDTV adoption process.

27. It has been argued that efficiencies resulting from the elimination of spectrum duplication should not be given any weight in the evaluation of this merger because they should be viewed as fixed cost savings, not marginal cost savings.<sup>29</sup> The argument is that only reductions in marginal costs will be passed on to consumers, since only reductions in marginal costs will lead to lower prices. In the context of new services, this argument is misguided.

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<sup>26</sup> EchoStar currently offers four HDTV channels (including a pay-per-view channel), while DIRECTV offers two channels. In addition to a HDTV HBO channel, DIRECTV provides a combination of live and taped sports and entertainment programming and pay-per-view programming on one of its HDTV channels. (The sports and entertainment programming is broadcast for roughly 18 hours per day, while pay-per-view is available for approximately six hours per day.)

<sup>27</sup> As Mark Smith, a spokesperson for the National Cable and Telecommunications Association, recently noted, “The cable industry has always been waiting for HDTV because it is an advanced service we can offer to our customers. Now that you have EchoStar and DirecTV getting into the HDTV game, it is incumbent for us to get into the game.” See <http://www.ilovehdtv.com/anniversary.html>

<sup>28</sup> Circuit City Comments at 5.

<sup>29</sup> Sidak Declaration at ¶ 96.

28. One traditional metric of the economic benefits associated with a specific good or service is consumer surplus, the value that consumers place on the good or service above the price charged for it. A number of academic papers have focused on the potentially large consumer surplus gains from the introduction of new goods or services, especially telecommunications services.<sup>30</sup> Without the merger, new advanced services may be delayed, rolled out on a smaller scale, or not rolled out at all. In particular, to the degree that the merger reduces the fixed costs of new advanced services, it increases the likelihood that new advanced services will be provided or expanded. Since it appears that consumers value the new services that New EchoStar will be able to offer once the spectrum duplication is eliminated, the consumer surplus gains from the increased availability of advanced services could potentially be quite substantial. This analysis is consistent with the Department of Justice/Federal Trade Commission Horizontal Merger Guidelines ("Merger Guidelines"). The Merger Guidelines do not limit themselves to marginal cost reductions as the sole source of efficiencies. Section 4 of the Merger Guidelines states, "Efficiencies also may result in benefits in the form of new or improved products, and efficiencies may result in benefits even when price is not immediately and directly affected."<sup>31</sup> An evaluation of efficiencies generated by the merger should thus not be limited to the impact of marginal cost reductions conditional on the offering of a service, but should more broadly consider the effect of the efficiencies on the availability of the service itself.

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<sup>30</sup> See, for example, Robert Willig, *Welfare Analysis of Policies Affecting Prices and Products* (Garland Press, 1980); Timothy Bresnahan and Robert Gordon, editors, *The Economics of New Goods*, (Chicago, IL: University of Chicago Press, 1997); and Amil Petrin, "Quantifying the Benefits of New Products: The Case of the Minivan," National Bureau of Economic Research Working Paper Number 8227, April 2001.

<sup>31</sup> See <http://www.ftc.gov/bc/docs/horizmer.htm>

## A MORE COMPETITIVE SATELLITE-BASED BROADBAND SERVICE

29. EchoStar and Hughes currently offer satellite-based Internet access products, but consumer acceptance of these products has so far been limited. Hughes currently has only about 100,000 residential and small business subscribers, while EchoStar has only about 40,000 subscribers, through its marketing of the StarBand product. For comparison, the FCC's recently released broadband report concludes that residential and small business high-speed Internet access via cable lines totaled 5.0 million and via Digital Subscriber Lines (DSL) totaled 2.6 million in June 2001.<sup>32</sup> The FCC broadband report also indicates that broadband services are still not available in large portions of the country: For example, the report indicates that 22 percent of all zip codes in the United States do not receive any broadband service.<sup>33</sup> These zip codes tend to be concentrated in rural areas not served by cable modem and DSL technologies.<sup>34</sup> Indeed, the FCC cites analyses that have predicted that up to 20 to 30 million homes may *never* have access to cable modem or DSL services, and that "about 25 to 30 percent of rural telephone subscribers are not likely to have access to high-speed services in the near future."<sup>35</sup> Despite the fact that satellite-based Internet access is technically available in all areas of the United States, the low penetration rate of this technology – even in areas without any access to DSL or cable modem service – raises questions about whether households in both rural and urban areas are likely to accept it on a large scale. In

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<sup>32</sup> Federal Communications Commission, *In the Matter of the Deployment of Advanced Telecommunications Capability*, CC Docket 98-146, Third Report at Appendix C, Table 3. I report the combined number of residential and small business Asymmetric Digital Subscriber Lines (ADSL) and "other wireline" services, which includes symmetric DSL.

<sup>33</sup> Id at Appendix C, Table 9.

<sup>34</sup> Id at Appendix C, Table 10.

<sup>35</sup> Id at ¶ 78 and ¶ 113.

particular, consumers appear to be very sensitive to the price of broadband services.<sup>36</sup> Such price sensitivity is particularly detrimental to extant satellite broadband services, which tend to have high upfront costs and the perception of inferior performance relative to cable modem and DSL services.<sup>37</sup> But the merger will help New EchoStar overcome these challenges by making satellite-based broadband more price competitive vis-à-vis the alternative high-speed Internet access technologies.

30. Prior to the merger, EchoStar's commitment to residential broadband service in the Ka-band has also been relatively modest, with only plans to construct a minimal number of spot-beam transponders on its Ka-band satellites. On the other hand, Hughes has already dedicated significant funds to developing its Spaceway product. Through economies of scale, Hughes hopes to achieve lower costs per subscriber than the current Ku-band broadband offerings. With the Ku-band services, executives note that the economies of scale are exhausted fairly quickly, since each transponder can only serve a limited number of subscribers. Once the maximum subscriber limit is reached, it is necessary to lease additional transponders. Thus, reductions in the average satellite cost per subscriber are limited to what can be achieved within individual transponders. Ka-band service, on the other hand, involves significant fixed costs (e.g., to build, launch, and insure the satellites), but lower marginal costs than Ku-band service. As Hughes has designed its Ka-band system, it is capable of handling a larger number of subscribers

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<sup>36</sup> For example, Hal Varian of the University of California at Berkeley concluded that, "Users are not willing to pay very much for higher bandwidth for accessing today's applications." See Hal R. Varian, "The Demand for Bandwidth: Evidence from the INDEX Project." University of California, Berkeley, September 2001, pages 14-15. See also Austan Goolsbee, "Subsidies, the Value of Broadband, and the Role of Fixed Costs," presented at the AEI-Brookings Joint Center for Regulatory Studies Conference on Broadband Communications, October 4-5, 2001.

<sup>37</sup> See McKinsey & Company and J.P. Morgan, "Broadband 2001: A Comprehensive Analysis of Demand, Supply, Economics, and Industry Dynamics in the U.S. Broadband Market," April 2, 2001, pages 45-47.

without any deterioration of connection speeds and with declining average costs. In other words, each Hughes Spaceway satellite will effectively operate as a single large transponder.

31. Hughes thus expects that when optimally utilized its Ka-band satellites will have satellite costs per subscriber that are lower than its current Ku-band offerings. The expectation is that Spaceway will be able to offer satellite broadband service at a price point that will increase consumer acceptance of the technology. Such a reduction in the price of satellite-based, high-speed Internet access will benefit households in all areas, whether they have access to terrestrial alternatives or not. The ability to offer a price competitive broadband product, however, depends critically on attracting a large number of subscribers. In particular, on its own, Hughes would have to utilize a significant share of the Ka-band satellite's capacity to achieve the economies of scale necessary to justify a lower price. On its own, Hughes may have substantial difficulty – and, at least, would face significant uncertainty – regarding whether it were possible to obtain the needed subscriber base. The combined firm's larger satellite video subscriber base from which they are more likely to draw broadband subscribers would help to ensure that the scale economies were captured and that satellite Internet access from the Ka-band was price competitive with cable modem and DSL services.

32. The proposed merger would better enable both companies to achieve the required economies of scale and lower equipment costs, both of which are necessary to capture residential as well as enterprise subscribers. Hughes' Spaceway business plan

envisioned the sale of satellite broadband products primarily to enterprise customers – and to the extent financially feasible, to residential customers as well. While time-of-day usage patterns for residential and enterprise customers vary somewhat – which may allow Hughes to share a portion of its satellite capacity among these two groups of subscribers – absent the merger, the costs of acquiring residential customers will remain relatively high, which makes it more difficult for Hughes to keep upfront costs low. As discussed above, studies of broadband demand suggest that it is unlikely that households will subscribe to a satellite-based broadband product that has a high upfront cost. The merger, however, will help lower subscriber acquisition costs, help make satellite-based broadband price competitive with cable modem and DSL services, and thereby help to attract residential subscribers to the product.

33. These lower subscriber acquisition costs could be achieved because the merger will allow New EchoStar to sell satellite-based broadband services to a larger subscriber base. Current satellite *video* subscribers are more likely to subscribe to satellite broadband services than other households. Such MVPD subscribers have already demonstrated the ability and willingness to place the necessary equipment on their houses. In fact, half of the subscribers to Hughes' current satellite broadband service also subscribe to DIRECTV and a somewhat higher percentage of StarBand's customers subscribe to EchoStar's video services. Thus, the ability to market broadband service to the combined subscriber base of the two DBS firms will lower customer acquisition costs. Increased sales of satellite-based broadband will also have the benefit of reducing manufacturing costs. As the volume of satellite broadband equipment that



needs to be manufactured increases, the average costs of producing the equipment will decline. The combination of a larger subscriber base and lower average equipment costs should help New EchoStar reach the necessary critical mass of subscribers to make satellite-based broadband price competitive with cable modem and DSL services.

34. New EchoStar has committed to a national pricing policy for its basic broadband product. Therefore, the areas of the country that are unlikely to receive cable modem or DSL services in the foreseeable future will benefit from the increased competition between satellite, cable modem, and DSL in larger markets. That is, without the merger, it is possible that price competitive satellite-based broadband will be generally unavailable, which may leave many rural areas without an attractive broadband product. With the merger, such a price competitive broadband product is not only possible, but likely. (See below for a discussion of how national pricing in the context of video services can “export” competitive pressures in larger markets to smaller and more rural markets.)

#### **IV. The Merger’s Impact on Competition**

35. A number of opposition commenters argue that the proposed merger between EchoStar and DIRECTV will have a significant adverse impact on competition in the MVPD market.<sup>38</sup> To understand why the proposed merger will not have such effects and why such comments are misguided, it is important to underscore the role that

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<sup>38</sup> See, for example, MacAvoy Declaration, Rubinfeld Declaration, and Sidak Declaration.

national pricing will play in “exporting” competition from the larger to smaller DMAs, to incorporate the merger-specific benefits that will enable New EchoStar to more effectively serve consumers and compete against cable providers, and to characterize correctly the degree of existing competition between the two DBS firms.

36. This section first develops a static analysis of how a combined entity would determine a national price. It then explores various factors that indicate that any potentially negative competitive effects are likely to be small relative to the dynamic benefits of the merger because the degree of existing competition between the two DBS firms appears to be significantly less intense than the degree of ongoing competition between the DBS firms and cable providers. I then proceed to review the competitive analyses of the economists who filed declarations opposed to the merger.

#### **HOW NEW ECHOSTAR WOULD SET ITS NATIONAL PRICE**

37. According to the FCC, cable firms provided service to 78 percent of all MVPD subscribers in 2001.<sup>39</sup> To expand its subscriber base, New EchoStar would need to price its products to attract cable subscribers. The experience of the DBS firms suggests that many consumers are reluctant to pay the upfront costs of equipment and installation to obtain DBS service. As a result, over the past five years, both EchoStar and DIRECTV have reduced upfront costs, while also pricing programming at competitive levels vis-à-vis most cable providers.

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<sup>39</sup> According to FCC, cable television “still is the dominant technology for the delivery of video programming to consumers in the MVPD marketplace.” See Eight Annual Cable Competition Report at ¶ 5.

38. EchoStar and DIRECTV currently price their products on a national basis. New EchoStar has committed to maintaining such a national pricing policy. As described below, our analysis of the churn data from both EchoStar and DIRECTV suggests that the number of DBS subscribers who consider cable as their “second choice” for MVPD services dwarfs the number of subscribers who consider the other DBS provider as their second choice. Such evidence suggests that New EchoStar will be unlikely to have the incentive and ability profitably to raise its national price because it would not want to lose customers to cable. The combined entity’s national price will tend to be driven down by the cost savings from the merger and gauged, as are current DBS prices, against a weighted average of competitive forces from various regions’ cable systems, with larger and potentially more competitive markets playing a greater role. New EchoStar’s national pricing policy, therefore, will help to ensure that cable competition in the larger DMAs is “exported” to smaller markets and non-cable passed areas.

39. Standard economic theory shows that when deciding on a price, a rational firm selling its product in several geographic markets, but charging the same price in all markets, will place greater weight on conditions in those markets in which it expects to sell more. As Mr. Sidak notes, a profit-maximizing firm will set its post-merger national price based on “the relative shares of consumers living in rural and urban areas, and the relative own-price elasticities of demand for each group of consumers of DBS service.”<sup>40</sup> For example, if I assume for simplicity that New EchoStar engages in differentiated products Bertrand price competition with cable and other MVPD providers in K

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<sup>40</sup> Sidak Declaration at ¶ 56.

geographic markets,<sup>41</sup> New EchoStar would choose a single nationwide price for DBS to maximize the following profit function:

$$\sum_{i=1}^K p q_i(p) - C(\sum_{i=1}^K q_i(p)) \quad (1)$$

where  $p$  is the uniform national DBS price levied by New EchoStar,  $q_i(p)$  is the demand for DBS in market  $i$  at price  $p$ , and  $C(\cdot)$  is the total cost of providing DBS service.

40. Given this model, New EchoStar's price-cost margin (or more accurately, the ratio of price minus marginal cost to price) when it is pricing to maximize static profits in total among the  $K$  markets can be expressed as follows:

$$\frac{p - c}{p} = \frac{1}{\sum_{i=1}^K \varepsilon_i s_i} \quad (2)$$

where  $p$  is the uniform national DBS price levied by New EchoStar,  $c$  is the marginal cost per subscriber (i.e., the derivative of total New EchoStar cost with respect to the number of nationwide subscribers),  $\varepsilon_i$  is the (absolute value of) the own-price elasticity of demand for DBS in geographic market  $i$ , and  $s_i$  is the share of New EchoStar's subscribers in market  $i$ .

41. Equation (2) shows that the more price sensitive DBS service demand is in those areas in which New EchoStar has more current or potential subscribers, the lower the post-merger margin and price. DBS demand in the bigger markets served by New EchoStar will be more price elastic if New EchoStar faces greater competition in such

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<sup>41</sup> Bertrand price competition, a standard model of competition, was also applied to the MVPD market by Mr. Sidak. See Sidak Declaration at ¶¶ 44-48.

markets.<sup>42</sup> The key factors in this theoretical model are thus (1) the geographic distribution of current DBS subscribers (as well as *potential* DBS subscribers), and (2) whether demand for DBS services is more price sensitive in larger markets. Furthermore, as discussed in more detail below, to the extent that households in larger markets have higher demand for complementary products (e.g., satellite-based broadband), this pricing model may *understate* the influence of the larger markets on the post-merger DBS price.

*Geographic distribution of current and potential DBS subscribers*

42. According to data from both EchoStar and DIRECTV, New EchoStar will likely draw most of its subscriber base from the larger DMAs. For example, while the largest 15 DMAs accounted for less than 30 percent of the two DBS firms' subscriber base in January 2001, these DMAs accounted for roughly half of total DBS subscriber growth in 2001. Such evidence suggests that the number of DBS subscribers has grown faster in the larger DMAs than in smaller DMAs. In addition, the percentage of households that are "extremely" or "very" interested in DBS is greater in larger markets than in smaller markets: According to January 2000 survey data from Forrester Research, respondents in the largest 30 DMAs (and the largest 15 DMAs) were significantly more interested in subscribing to satellite television than respondents not residing in the top

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<sup>42</sup> There are a number of reasons to expect that DBS demand will be more price sensitive in bigger markets. In large markets, rivals are more likely to offer more and better substitutes for DBS. For example, DBS is more likely to compete against digital cable in the larger DMAs. As noted below in the text, digital cable is a more formidable competitor with DBS because it eliminates the quality and channel capacity advantages that DBS has traditionally enjoyed. It therefore offers DBS subscribers a better substitute than other extant MVPD offerings. Another reason that New EchoStar may face greater competition and a more elastic demand in the larger DMAs is the presence of other DBS substitutes, such as overbuilders and satellite master antenna television (SMATV) competition for multiple dwelling unit (MDU) and commercial multiple tenant unit (MTU) residents in the larger DMAs.

DMAs.<sup>43</sup> It is therefore reasonable to expect that future DBS subscriber growth will be disproportionately concentrated in the larger markets. In other words, New EchoStar's national price will be determined by putting additional weight on cable prices in the largest DMAs.

*Elasticity of demand for DBS services in larger versus smaller markets*

43. The available evidence indicates that larger DMAs are more competitive and offer more and better substitutes for DBS, which would suggest that DBS' own-price elasticity of demand would be higher in these larger DMAs. For example, even commenters opposed to the merger acknowledge that digital cable is a more effective competitor to DBS than analog cable.<sup>44</sup> Since cable systems in larger DMAs are more likely to offer digital cable,<sup>45</sup> DBS' own-price elasticity of demand would be higher in these larger DMAs.<sup>46</sup> In addition, my research on the number of competitors in the top major metropolitan areas suggests that each of the top 15 DMAs has one or more non-cable, non-DBS MVPD provider that is currently operating or has been licensed to operate.<sup>47</sup> For example, in New York City – the largest DMA – the incumbent cable firms face competition from SMATV providers and RCN, an overbuilder, which is also

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<sup>43</sup> Author's calculation based on Forrester Research, Technographics® Survey, January 2000.

<sup>44</sup> See, for example, MacAvoy Declaration at ¶ 9 and Rubinfeld Declaration at ¶ 61. Dr. Rubinfeld stated that he believes "that only digital cable will be able to compete successfully with DBS."

<sup>45</sup> For example, the Warren data indicate that the ratio of homes passed by digital cable to DBS subscribers is higher in larger DMAs than in smaller DMAs. More generally, the Claritas data suggest that channel capacity is significantly higher in the larger DMAs than in the smaller DMAs.

<sup>46</sup> It is important to emphasize that the fact that digital cable may be a more effective competitor to DBS does not imply that analog cable is not part of the relevant product market. As described below, churn data from the DBS firms indicate that many departing customers switch to analog cable, as well as to digital cable.

<sup>47</sup> These non-cable, non-DBS providers include "overbuilders," multi-channel multi-point distribution service (MMDS), private cable or SMATV systems, and incumbent local exchange carriers (ILEC) using Very High-Speed Digital Subscriber Lines (so-called VDSL).

providing service in six of the nine next largest DMAs.<sup>48</sup> Consistent with these findings of more competition in larger DMAs, the basic fees for cable service appear to be lower in larger DMAs and the number of channels in use appears to be higher.<sup>49</sup>

44. Overbuilders have historically played an important role in constraining the prices of cable providers, which is indicative of their effectiveness as competitors in the MVPD market. The FCC's most recent report on competition in the MVPD market suggests that a new class of overbuilders – so-called Broadband Service Providers (BSPs) – may provide even more effective competition in the future. The FCC notes the “growing importance” of BSPs, who are overbuilding incumbent cable systems with “state-of-the-art systems that offer a bundle of telecommunications services.”<sup>50</sup> Overbuilders have faced – and continue to face – a number of challenges in providing effective competition to incumbent cable firms, but the FCC concluded that:

“BSPs appear to be attempting to overcome [these] difficulties of overbuilding by taking advantage of regulation new to the 1996 Act (most notably the open video system rules), carefully selecting communities with favorable demographics, *such as high population density*, and building systems that are more advanced than the incumbent cable operators’. Building advanced systems allows BSPs the ability to offer a bundle of services, such as video, voice, and high-speed Internet access, which may increase per subscriber revenue and decrease churn.”<sup>51</sup>

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<sup>48</sup> See “RCN Announces Third Quarter Results,” Press Release, November 7, 2001. In past filings, a number of cable providers have noted the competition that SMATV providers impose in urban areas: For example, Cablevision recently argued that, in New York City, it “faces significant competition from various providers of SMATV service.” See Reply Comments of Cablevision Systems Corporation, *In the Matter of Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, Notice of Inquiry, CS Docket No. 01-129, (dated September 5, 2001), at 3-4. The association of cable providers has also asserted that SMATV provides “vigorous” competition to cable systems in MDUs and MTUs. See Decker Anstrom, President and CEO of National Cable Television Association, Testimony Before the House Judiciary Committee, September 24, 1997.

<sup>49</sup> Author’s calculations, based on data from Claritas.

<sup>50</sup> Eighth Annual Cable Competition Report at ¶ 107.

<sup>51</sup> Eighth Annual Cable Competition Report at ¶ 107. Footnote omitted; emphasis added.

As the FCC stated, the new overbuilders are targeting larger markets, which are typically densely populated. The upshot of such a finding is that larger markets are more likely to become even more competitive in the future, as BSPs roll out their service in “high-population density areas.”

45. A review of the academic literature on the impact of competition in the MVPD market, along with the responses of cable firms to the entry of overbuilders, suggests that quality-adjusted cable prices will be lower in these larger, more competitive markets. Although the literature on the impact of overbuilders on competition in the MVPD market may have shortcomings, a dozen academic studies – including four analyses by the FCC – have found that prices in markets with overbuilders are between 8 and 34 percent lower than in markets without them.<sup>52</sup> The responses of local cable firms to the entry of an overbuilder into the local MVPD market also suggest that overbuilders

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<sup>52</sup> See Thomas Hazlett and Matthew Spitzer, *Public Policy Toward Cable Television: The Economics of Rate Controls*, (Cambridge, MA and Washington, DC: MIT Press and AEI Press, 1997), (“Hazlett and Spitzer”), pages 30-31. For example, as part of its February 1994 cable rate regulation rulemaking, the FCC used 1992 data on cable prices by area and found that communities with head-to-head competition between cable providers and overbuilders had 16 percent lower cable prices than communities with a monopoly cable operator. See Federal Communications Commission, *In the Matter of Implementation of Sections of the Cable Television Consumer Protection and Competition Act – Rate Regulation, Buy-Through Prohibition*, Third Report and Order, MM Docket 92-266 and MM Docket No. 92-262 (adopted February 22, 1994; released March 30, 1994). In 1996, Jith Jayaratne, then an economist at the Federal Reserve Bank of New York, improved upon the FCC’s analysis: He concluded that cable prices in areas with overbuilders “are, on average, 12 percent lower than monopoly rates.” See Jith Jayaratne, “A Note on the Implementation of Cable TV Rate Caps,” *Review of Industrial Organization*, Volume 11, 1996, (“Jayaratne”) pages 823. Similarly, a paper published in the *RAND Journal of Economics* in 1997 concluded that cable prices in areas with overbuilders were 17 to 22 percent lower than areas without them. See William Emmons and Robin Prager, “The Effects of Market Structure and Ownership on Prices and Service Offerings in the U.S. Cable Television Industry,” *RAND Journal of Economics*, Vol. 28, No. 4, Winter 1997, pages 732-750. Communities with competition from overbuilders also appear to have higher levels of service that are not fully accounted for in the above-cited literature: The evidence suggests that subscribers in overbuilt areas have more choices of non-broadcast channels and lower installation prices. See Jayaratne, page 823; Hazlett and Spitzer, page 29; and Jennifer Fearing and Charles Lubinsky, “Qualitative Differences in Competitive Cable Markets Prior to Rate Regulation,” mimeo, October 1997. Fearing and Lubinsky conclude that installation fees are 16 to 36 percent lower in competitive markets than in monopolistic markets.



play an important role in constraining cable prices. As the FCC recently noted, “in Boston, Massachusetts, in response to RCN’s entry, the incumbent cable operator in Boston, Cablevision of Boston (“Cablevision”), ‘moderated’ its regional rate increase in the Boston area and agreed to improve its commitment to public and educational channels.”<sup>53</sup> Moreover, the competitive effect of overbuilders may extend to neighboring communities that are not currently served by the overbuilder. To the extent that cable operators in nearby communities fear the entry of an overbuilder, they may respond to the *potential* competition from overbuilders by lowering prices or upgrading their infrastructure.<sup>54</sup> The impact of overbuilders may thus be broader than their current geographical footprint.

46. In summary, New EchoStar has committed to a national pricing strategy. The churn data presented below suggest that cable is each DBS firm’s primary competitor. Thus, cable will continue to constrain the national price charged by New EchoStar. In addition, economic theory shows that the choice of New EchoStar’s national price will put greater weight on the competitive conditions in those markets in which it sells more of its product. As noted above, larger DMAs appear to be more competitive than smaller DMAs. For example, larger DMAs are more likely to have digital cable systems which are a more formidable competitor to DBS, since they

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<sup>53</sup> See Eighth Annual Cable Competition Report at ¶ 198. Similarly, when RCN introduced service in Somerville, Massachusetts, the local cable provider, Time Warner, froze its rates – even though it had “announced a 10% price increase for its standard cable services in 82 Massachusetts communities.” See Federal Communications Commission, *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, Sixth Annual Report, (“Sixth Annual Cable Competition Report”), at ¶ 230.

<sup>54</sup> As the FCC recently stated, RCN “contends that in anticipation of its entry in Fairfax County, a suburb of Washington, D.C., the incumbent Cox announced an upgrade of its plant.” See Eighth Annual Cable Competition Report at ¶ 201.

eliminate DBS' quality and channel capacity advantages. Therefore, New EchoStar's national price will allow smaller, more rural DMAs to benefit from the more intense competition in larger DMAs.

#### **DYNAMIC ANALYSIS OF COMPETITIVE EFFECTS**

47. The national pricing model presented above is static, but the MVPD market is dynamic, with new products and services being introduced regularly. This dynamism of the MVPD market is also expected to promote competition between New EchoStar and cable, and impose corresponding constraint on the prices charged by the combined entity. For example, the greater geographic coverage of local channels, the increased ability to broadcast specialty, ethnic, and foreign language programming, the improved interactive television services, and the capacity to offer expanded video-on-demand should help New EchoStar to compete more vigorously against the cable industry, especially since the cable providers can upgrade unilaterally their bandwidth to provide these services on a digital-cable tier. The Merger Guidelines contemplate the role efficiencies can play in improving competition. Specifically, the Merger Guidelines state that, "Efficiencies generated through merger can enhance the merged firm's ability and incentive to compete, which may result in lower prices, improved quality, enhanced service, or new products."<sup>55</sup>

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<sup>55</sup> See the Department of Justice/Federal Trade Commission Horizontal Merger Guidelines, Section Four, available at <http://www.ftc.gov/bc/docs/horizmer.htm>

48. The commenters fail to acknowledge that the efficiencies generated specifically by the proposed merger of EchoStar and DIRECTV will have a dynamic impact on bolstering competition and programming diversity in the MVPD market. In particular, DBS has historically held an advantage relative to analog cable in terms of channel capacity, and DBS consumers have indicated a strong preference for such capacity. For example, a survey of new DBS subscribers found that the leading reason for switching to DBS was “more channels.”<sup>56</sup> That revealed preference, in turn, has pressured the cable firms to invest in increased channel capacity. As National Cable and Telecommunications Association (NCTA) President and CEO Robert Sachs recently stated, “Being digital from the start, and having the advantage of substantially greater channel capacity, DBS spurred cable operators to replace hundreds of thousands of miles of coaxial cable with fiber optics so that they too could offer consumers hundreds of channels of digital video and audio services.”<sup>57</sup> In 1999, Comcast emphasized to the FCC the role that DBS competition has played in pushing it to upgrade its systems:

“DIRECTV and EchoStar, respectively, offer a total of 211 and 193 digitally delivered channels. These channel capacities exceed those of even the most advanced analog cable systems.... In response to this competitive challenge in its service areas and in order to remain competitive, Comcast undertook the massive investments necessary to upgrade its systems, increase channel capacity, and offer new services.”<sup>58</sup>

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<sup>56</sup> According to a survey by The Yankee Group, the top five reasons for people switching to DBS were more channels (79 percent), greater movie selection (69 percent), clearer picture and sound (66 percent), dissatisfied with cable (46 percent), and cable was too expensive (44 percent). See Satellite Broadcasting & Communications Association Press Release, “Study Shows Satellite TV Increasing Urban Penetration,” August 14, 2000.

<sup>57</sup> See Robert Sachs, Testimony Before Subcommittee on Antitrust, Business Rights, and Competition, Committee on the Judiciary, United States Senate, April 4, 2001, pages 2-3.

<sup>58</sup> See Reply Comments of Comcast, *In the Matter of Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, Notice of Inquiry, CS Docket No. 99-230, (dated September 1, 1999), at 9.

The channel capacity advantage of DBS has thus pressured the cable firms to invest in increased channel capacity.<sup>59</sup> (It is important to note that the increase in channel capacity has also provided new opportunities to programmers, which is a specific goal of the FCC.)

49. As described above, EchoStar and DIRECTV are now constrained in the services that they can each provide on their own. In the absence of the merger, the pressure that DBS firms exert on cable providers to innovate and to increase capacity may be attenuated. The proposed merger between EchoStar and DIRECTV, however, will eliminate spectrum redundancies and allow for expanded channel capacity – which will likely spur the development of new programming and new innovative services. Such an expansion of channel capacity will likely force cable systems to continue to upgrade their network infrastructure. Relative to today's cable infrastructure, an upgraded cable system will exert even more competitive pressure on DBS pricing – thus perpetuating the virtuous cycle of competitive innovation.

50. Indeed, the history of the MVPD market clearly demonstrates the pressure to upgrade systems to meet the competition. DBS channel capacity begat cable system upgrades, which in turn has exerted pricing pressure on the DBS firms. That competitive pressure manifests itself in lower levels of DBS subscriber growth, *ceteris paribus*.<sup>60</sup> Mr.

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<sup>59</sup> Even opponents of the proposed merger of EchoStar and DIRECTV acknowledge that DBS is “the main source of pressure on cable to expand channel capacity.” See American Antitrust Institute Comments at 2.

<sup>60</sup> For example, Goldman Sachs concluded that “We see the bundling of [cable] services as the most significant threat to DBS because of its potential not only to slow gross additions, but also to win back subscribers (seen through higher churn). Both have the obvious effect of slowing net subscriber growth for DISH Network and DIRECTV.” See Goldman Sachs, “Satellite Communications: DBS Operators,” December 18, 2000 at 1. Lehman Brothers similarly concluded that, “cable will become a far more

Sidak cites evidence that “DBS growth has slowed dramatically where digital cable has been rolled out.”<sup>61</sup> Jerry Kent, the former Chief Executive Officer of Charter Communications, recently stated that “A couple of years ago, frankly, cable had an inferior product. Now [cable providers] have as many or more channels than satellite. And we are more competitive from a price-value standpoint.”<sup>62</sup>

51. This process of competitive responses benefits DBS *and* cable subscribers. The danger is that, in the absence of the merger, the competitive cycle will be impeded by the constraints facing the DBS firms. If that were to occur, both DBS and cable subscribers could suffer.

52. The competitive cycle may also have other benefits in related markets. For example, the proposed merger of EchoStar and DIRECTV may have two important effects on competition in the broadband market: First, as described above, it would better allow the combined entity to offer a price competitive satellite-based, high-speed Internet service, which would increase competition in the broadband market. Second, it would likely pressure cable providers to upgrade their infrastructure so that connection speeds do not deteriorate as the subscriber base increases. Such upgrades would increase the

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significant foe, and will likely relegate satellite television to a deep second-class status in most urban markets.” See Lehman Brothers, “Satellite Communications: Industry Update,” February 8, 2002 at 1.

<sup>61</sup> Sidak Declaration at ¶ 34, quoting Salomon Smith Barney Equity Research, *DBS Industry Update*, January 17, 2002 at 22.

<sup>62</sup> See Jerri Stroud, “Satellite, Digital Cable Companies Wage War for Subscribers,” *St. Louis Post-Dispatch*, May 21, 2001 at 8.

speed at which extant cable modem subscribers connect to the Internet or allow more broadband users at any given connection speed.<sup>63</sup>

53. Moreover, the proposed merger will bolster competition between DBS and cable providers by increasing New EchoStar's ability to offer a price competitive satellite-based broadband service bundled with expanded programming and advanced services. Just as bundled packages make cable providers a more effective competitor with DBS, a satellite-based bundled package will make DBS more effective in competing with cable providers.<sup>64</sup> To the benefit of consumers, bundled packages could start a series of competitive responses. Such competition between cable and DBS could spill over into the anticipated competition between cable and DSL service; for example, if cable operators make a competitive offer to respond to New EchoStar, DSL providers may be forced to respond to the cable offer to remain competitive in the broadband market.<sup>65</sup> In the absence of the merger, however, it is possible that the competitive cycle

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<sup>63</sup> Cable providers dedicate a portion of their system capacity to provide high-speed Internet access. Cable providers usually assign the equivalent of roughly one television channel, which allows for about 40 million bits per second of downstream capacity. This downstream capacity, though, must be shared among many subscribers. If traffic increases, the connection speed of each individual user falls. If demand for high-speed Internet service grows and the typical connection speed is significantly reduced, a cable provider has two choices: it can either dedicate more bandwidth to data services (and reduce the number of television channels) or upgrade its infrastructure. A cable system upgrade induced by competition from DBS can therefore have a positive impact on connection speeds for cable modem users.

<sup>64</sup> Cable operators often bundling cable television (and especially digital cable television) with cable modem service at a discount of \$5 or \$10 per month. Deutsch, *DIRECTV: Category Review and Competitive Analysis*, August 2001.

<sup>65</sup> Gerald Faulhaber, the former Chief Economist at the Commission, recently argued that, "customers desiring broadband Internet connections were greatly advantaged by the desire of Americans to watch high quality television, and the competition for that market initiated by the introduction of satellite. This provided the impetus for cable firms to deploy broadband access in their search for a low incremental investment revenue stream. In turn, cable deployment provided the impetus for RBOCs to deploy DSL for fear of being attacked in their core business by the cable firms." See Gerald R. Faulhaber, "Broadband Deployment: Is Policy in the Way?" presented at the AEI-Brookings Joint Center for Regulatory Studies Conference on Broadband Communications, October 4-5, 2001.

will not be as intense, which would harm both DBS and cable subscribers (and perhaps DSL subscribers as well).

54. The ability of New EchoStar to offer bundled packages may also produce *lower* prices for video services. As described in Section III, the proposed merger will allow New EchoStar to improve and expand the menu of complementary products (such as interactive services, video-on-demand, high-speed Internet service, HDTV, etc.) to existing MVPD services. With the introduction and expansion of complementary products by New EchoStar, the firm would have an incentive to reduce the price of existing DBS video services to attract customers to other bundled products. The profits forgone on video services would be more than offset by the margins on the additional complementary products.

55. Another factor that will continue to constrain DBS prices is the need to capture cable subscribers soon, before the widespread adoption of digital cable and bundled packages of digital cable and high-speed Internet access. Among other reasons, the incentive to attract cable subscribers as soon as possible arises from the “stickiness” of digital cable and bundled-package subscribers. Such stickiness results from higher switching costs (e.g., switching e-mail addresses) after an individual has subscribed to a digital cable bundle. Consumers who commit to a digital cable/cable-modem bundle may perceive fewer benefits to moving to DBS (relative to analog cable customers).<sup>66</sup> Indeed, a Cox Communications executive recently stated that “there is clear evidence that

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<sup>66</sup> Goldman Sachs similarly notes that “As cable operators upgrade their networks and roll out new service, cable subscribers will have less incentive to ‘churn’ to DBS.” See Goldman Sachs, “Satellite Communications: DBS Operators,” December 18, 2000, page 33.

bundled services provide stickiness.”<sup>67</sup> An AT&T Broadband executive similarly noted that digital cable has lowered the rate of churn.<sup>68</sup>

56. Indeed, digital cable subscribership is growing at a very rapid pace: according to the NCTA, the number of digital cable subscribers has increased nine-fold in the past three years, rising from 1.5 million in 1998 to 13.7 million in November 2001.<sup>69</sup> While meaningfully forecasting future penetration rates of a new technology is an inherently difficult task, analysts have estimated that more than half of all cable subscribers will have digital cable within three or four years.<sup>70</sup> Such an expected digital cable market share would impose significant constraints on the DBS industry in the future. Therefore, New EchoStar will need to price its product competitively following the merger, so that it can attract cable subscribers *before* they sign-up for bundled packages.

#### THE DEGREE OF COMPETITION BETWEEN ECHOSTAR AND DIRECTV

57. In their comments, Dr. MacAvoy and Mr. Sidak present some evidence that they claim purports to show that DIRECTV and EchoStar compete vigorously. The

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<sup>67</sup> Jane Black, “Why Cox Is Leading Cable’s Comeback,” *Business Week Online*, February 14, 2001, quoting Frank Loomans, Cox Communications’ Vice President for Finance. A different Cox Communications executive noted that “churn among bundled customers is 33% to 50% less than that of single-product customers.” See Cox Communications Press Release, “Cox Communications Announces One Million ‘Bundled’ Customers,” November 26, 2001, quoting Joe Rooney, Cox Communications’ Vice President for Marketing, available at <http://www.cox.com/PressRoom/Default.asp?LocalSys=>

<sup>68</sup> Jim McConville, “Let The Tiers Flow,” *Electronic Media*, September 18, 2000, quoting Doug Sescerman, AT&T Broadband’s Senior Vice President for Marketing.

<sup>69</sup> For data on the growth of digital cable, see the NCTA website at [http://www.ncta.com/industry\\_overview/indStats.cfm?statID=14](http://www.ncta.com/industry_overview/indStats.cfm?statID=14).

<sup>70</sup> See Goldman Sachs, “Satellite Communications: DBS Operators,” December 18, 2000, page 35. Goldman Sachs estimates that digital cable subscribership will reach 34.5 million in 2004, 39.5 million in 2005, and 43.5 million in 2006.